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ON LINE DATABASES: WPI AND CLAIMS

(54) Cosmetic tinted gels

(57) A tinted cosmetic composition is in the form of an aqueous gel comprising 0.1% to 20% by weight each of water dispersible polymer-treated pigment and a hydrophilic gelling agent. Glycerine is an optional component. Pigment is preferably a polyester or polyesteramide treated pigment. Typical pigments are iron oxides, talc, zeolite, kaolin and/or -TiO₂ or organic pigments e.g. phthalocyanines, toluidene red. Gellant may be a cellulose ether, PVP, PVA or a gum.

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Cosmetic Compositions

Technical Field

The present invention relates to cosmetic compositions. In particular it relates to tinted cosmetic compositions in the form of aqueous gels which provide superior product stability and pigment dispersion together with excellent skin feel, skin coverage, application, skin tone matching and reduced skin irritation and rub-off.

Background of the Invention

Skin is made up of several layers of cells which coat and protect the keratin and collagen fibrous proteins that form the skeleton of its structure. The outermost of these layers, referred to as the stratum corneum, is known to be composed of 250 Å protein bundles surrounded by 80 Å thick layers. Anionic surfactants and organic solvents typically penetrate the stratum corneum membrane and, by delipidization (i.e. removal of the lipids from the stratum corneum), destroy its integrity. This destruction of the skin surface topography leads to a rough feel and may eventually permit the surfactant or solvent to interact with the keratin, creating irritation.

It is now recognised that maintaining the proper water gradient across the stratum corneum is important to its functionality. Most of this water, which is sometimes considered to be the stratum corneum's plasticizer, comes from inside the body. If the humidity is too low, such as in a cold climate, insufficient water remains in the outer layers of the stratum corneum to properly plasticize the tissue; and the skin begins to scale and becomes itchy. Skin permeability is also decreased somewhat when there is inadequate water across the stratum corneum. On the other hand, too much water on the outside of the skin causes the stratum corneum to ultimately sorb three to five times its own weight of bound water. This swells and puckers the skin and results in approximately a two to three fold increase in the permeability of the skin to water and other polar molecules.

Thus, a need exists for compositions which will assist the stratum corneum in maintaining its barrier and water retention functions at optimum performance in spite of deleterious interactions which the skin may encounter in washing, work, and re-creation.

Conventional cosmetic cream and lotion compositions as described, for example, in Sagarin, Cosmetics Science and Technology, 2nd Edition, Vol. I, Wiley Interscience (1972) and Encyclopaedia of Chemical Technology, Third Edition, Volume 7 are known to provide varying degrees of emolliency, barrier and water-retention (moisturising) benefits. However, they can also suffer serious negatives in terms of skin feel (i.e. they often feel very greasy on the skin) as well as having poor rub-in, absorption and residue characteristics.

It would also be desirable to provide a cosmetic composition which delivered pigments to the skin of the user at the same time as providing excellent moisturisation. A pigmented cosmetic composition can serve to even skin tone and texture and to hide pores, imperfections, fine lines and the like. Many attempts have been made to deliver pigments to the skin. Up to now, however, the only viable delivery system has been to incorporate pigments into an emulsion type or oil-containing system eg. oil-in-water, water-in-oil or water-in-silicone emulsions. It is known that conventional pigments have a tendency to react with hydrophilic gelling agents, typically used in moisturising gels, leading to a decrease in product stability.

A moisturising gel composition containing a hydrophilic gelling agent is disclosed in EP-A-0,513,183. The composition comprises glycerine, water-soluble polyglycerylmethacrylate lubricant and hydrophilic (Carbopol-type) gelling agent.

Although emulsion type cosmetic compositions containing pigments provide uniform skin coverage and colour on application to the skin, they can, however, suffer negatives such as poor skin feel and spreadability.

Attempts have been made to deliver colour to the skin via the use of gel-type systems incorporating water-soluble dyes. These have, however, suffered from consumer negatives such as skin irritation, tendency to rub off onto clothes and penetration into the skin.

It would therefore be desirable to provide a tinted gel-type cosmetic composition having improved product stability and pigment dispersion together with excellent skin tone matching, skin feel, spreadability and application characteristics, and reduced skin irritation and rub-off.

It is accordingly one object of the invention to provide a tinted gel-type cosmetic composition which exhibits improved product stability and pigment dispersion.

It is a further object of the invention to provide a tinted gel-type cosmetic composition with improved skin feel, spreadability and application characteristics. It is a further object of the invention to provide a tinted gel-type cosmetic composition with improved skin tone matching and reduced irritation and rub-off.

Summary of the Invention

According to one aspect of the present invention there is provided a cosmetic composition in the form of an aqueous tinted gel comprising from about 0.1% to about 20% by weight of a water-dispersible polymer-treated pigment and from about 0.1% to about 20% by weight of a hydrophilic gelling agent.

The compositions of the present invention provide improved product stability, pigment dispersion, skin feel, spreadability and moisturisation without the consumer negatives such as irritation and rub-off.

All levels and ratios are by weight of total composition, unless otherwise indicated.

Detailed Description of the invention

A first essential ingredient in the compositions of the invention is a water-dispersible polymer-treated pigment or mixture of pigments. Preferably the pigment is a water-dispersible polyester or polyesteramid -treated pigment, more preferably a water-dispersible polyester-treated pigment. Suitable water-dispersible polyester-treated pigments are those available under the

tradename Eastman AQ Treated Pigment (from Eastman Chemical Corporation). The pigment is present in an amount of from about 0.1% to about 20%, preferably from about 1% to about 15%, and more preferably from about 5% to about 12% by weight.

A preferred water-dispersible polyester or polyester amide for use herein comprises the following repeat units:

- (a) at least one difunctional dicarboxylic acid,
- (b) at least one difunctional sulfomonomer containing at least one sulfonate group of the formula:



wherein M is H, a metal ion, or a nitrogen-containing basic group, and wherein said sulfonate group is attached directly to an aromatic nucleus and the functional groups of said sulfomonomer are hydroxy, carboxy, amino or a mixture thereof, and

- (c) at least one glycol or a mixture of a glycol and a diamine having two $-\text{NRH}$ groups, the glycol containing two $-\text{CH}_2\text{-OH}$ groups, wherein R is H or an alkyl group of 1 to 4 carbon atoms.

Preferably the difunctional sulfomonomer is present at a level of from about 2 to about 25 mole %, based on a total of all acid, hydroxyl and amino equivalents being equal to 200 mole %.

The water-dispersible polyester-treated pigment used herein comprises from about 1% to about 40%, preferably from about 5% to about 30% by weight thereof of polymer. The average particle size of the treated granulated pigment product is typically between 75 μm and about 1000 μm , with a more typical average particle size being between about 125 μm and about 500 μm , especially between about 150 μm to about 300 μm .

The pigment materials useful in the present invention include water-insoluble, or sparingly water-soluble inorganic and organic pigments, and pearlants commonly used in cosmetics, paints, coatings, and inks, preferably inorganic pigments.

Typical inorganic pigments include iron oxides of various colors (yellow, red, brown and black), ferric ammonium ferrocyanide (blue), manganese violet, ultramarine blue, chrome oxide (green), talc, zeolite, kaolin, titanium dioxide (white) and mixtures of said inorganic pigments. Typical pearlants include mica, bismuth oxychloride and treated mica such as titanated micas.

Organic pigments useful in this invention include natural colorants and synthetic monomeric and polymeric colorants. Typical examples are phthalocyanine blue and green pigments, diarylide yellow and orange pigments, and azo-type red and yellow pigments such as toluidine red, litho red, naphthol red and brown pigments.

Generally copolymer pigments useful in this invention are water-insoluble polymers such as nylon powder, polyethylene and polyester colorants. The types of polyesters employed in this invention may include linear, thermoplastic, crystalline or amorphous materials produced using one or more diols and one or more dicarboxylic acids copolymerized with colorants. In general, the diol components of the polyester include examples such as neopentyl glycol, ethylene glycol, 1,4-cyclohexanedimethanol, 1,2-propanediol, 1,3-propanediol, 1,6-hexanediol, 1,2-cyclohexanediol, 1, 4-cyclohexanediol, 1,10-decanediol, 1,2-cyclohexanedimethanol, 1,3-cyclohexanedimethanol, X,8-bis(hydroxymethyl) tricyclo-[5.2.1.0]-decane, wherein X represents 3,4, or 5, and diols containing one or more oxygen atoms in the chain, e.g. diethylene glycol, triethylene glycol, dipropylene glycol, or tripropylene glycol and the like. These diols contain 2 to 18, preferably 2 to 12, carbon atoms. In addition, cycloaliphatic diols can be used in their cis and trans configuration or as a mixture of both forms. The acid components (aliphatic, alicyclic, or aromatic dicarboxylic acids) of the polyester may consist of terephthalic acid, naphthalene 2,6-dicarboxylic acid, isophthalic acid, 1,4-cyclohexanedicarboxylic acid, 1,3-cyclohexanedicarboxylic acid, succinic acid and the like. The anhydride and esters of the dicarboxylic acids can likewise be employed.

The colorants copolymerized with polyesters include 2,2'-(9,10-dihydro-9,10-dioxo-1,5-anthracenediyl)-diimino) bis-benzoic acid, m thyl 3-4-[[(2-(acethoxy)ethyl] ethylamino]-2-methylphenyl]-2-cyano-2-propenoate, 1,5-

bis[(3-hydroxy,2,2-dimethylpropyl)amino]anthraquinone and other dyes containing two reactive primary alcohol, acid, ester or acetoxy groups. The colorant content in the polymer is in the range of 8-50%.

Exemplary pigments useful in the present invention include the C. I. pigment materials, especially polymer-treated inorganic pigments containing iron oxide or titanium dioxide such as, for example, C. I. Pigment Yellow 42, C. I. Pigment Red 101, C. I. Pigment Black 11 and C. I. Pigment White 6. It is noted that pigments having large amounts of ionizable cations are not preferred since they interfere with the water dispersibility of the polymer.

The polyesters useful herein for treating pigment or mixture of pigments comprise linear, water-dissipatable polymers having an inherent viscosity of at least 0.1 and preferably at least 0.2 and more preferably at least 0.3 (measured as described hereinbelow) and a glass transition temperature ranging from 25 to 90°C. when the polymers are in the dry state. When the polymers contain 1-25% water of its own weight, the glass transition temperatures ("Tg"s, as measured by differential scanning calorimetry (DSC)) may drop to a lower range usually below 50°C. The polymer compositions useful in this invention are polyesters and polyesteramides described in US-A-3,5446,008, US-A-3,734,874, US-A-3,779,993 and US-A-4,233,196. The polyester or polyesteramide used herein preferably comprise a dicarboxylic acid component, a difunctional sulfomonomer component and a glycol component.

The dicarboxylic acid component of the polyester or polyesteramide comprises aliphatic dicarboxylic acids, alicyclic dicarboxylic acids, aromatic dicarboxylic acids, or mixtures of two or more of these acids. Examples of such dicarboxylic acids include succinic, glutaric, adipic, azelaic, aebacic, itaconic, 1,4-cyclohexanedicarboxylic, phthalic, terephthalic and isophthalic. If terephthalic acid is used as the carboxylic acid component of the polyester, superior results are achieved when at least 5 mole percent of one of the other acids is also used. The preferred dicarboxylic acid component for use herein is isophthalic acid.

It should be understood that use of the corresponding acid anhydrides, esters, and acid chlorides and other substituted derivatives of these acids is included in the term "dicarboxylic acid".

Other suitable acids are disclosed in, for example, US-A-3,779,993. The difunctional sulfo-monomer component of the polyester or polyesteramide may advantageously be a dicarboxylic acid or an ester thereof containing a metal sulfonate group or a glycol containing a metal sulfonate group or a hydroxy acid containing a metal sulfonate group. The metal ion of the sulfonate salt may be Na+, Li+, K+ and the like. The resulting polyesters or polyesteramides are less readily dissipated by cold water and more readily dissipated by hot water. It is possible to prepare the polyester or polyesteramide using, for example, as sodium sulfonate salt and later by ion-exchange replace this ion with a different ion, and thus alter the characteristics of the polymer. The difunctional monomer component may also be referred to as a difunctional sulfo-monomer and is further described hereinbelow.

Advantageous difunctional sulfo-monomer components are those wherein the sulfonate salt group is attached to an aromatic acid nucleus such as benzene, naphthalene, diphenyl, oxydiphenyl, sulfonyldiphenyl or methylenediphenyl nucleus. Preferred results are obtained through the use of sulfophthalic acid, sulfoterephthalic acid, sulfoisophthalic acid, 4-sulfonaphthalene-2,7-dicarboxylic acid, and their esters; metallosulfoaryl sulfonate as described in US-A-3,779,993. Most preferred for use herein is sulfoisophthalic acid.

When the sulfonate-containing difunctional monomer is an acid or its ester, the polyester or polyesteramide should contain at least 8 mole percent of said monomer based on total acid content, with more than 10 mole percent giving particularly advantageous results. Total acid content is calculated as the sum of (1) moles of component (a) namely dicarboxylic acids, (2) one-half of the moles of carboxyl-containing compounds of component (d), (3) moles of component (c) which are dicarboxylic acids, and (4) one-half of the moles of component (c) which are monocarboxy-containing compounds.

Preferably at least part of the glycol component contains repeating units of a poly(ethylene glycol) of the formula $H-(OCH_2-CH_2)_n-OH$ wherein n is an integer of 1 to 500, more preferably 2 to about 500. The values of n and the mole percent of poly(ethylene glycol) within the stated range is inversely proportional to the quantity of n within the stated ranges. Thus, when the mole percent is high, the value of n is low. On the other hand, if the mole percent is low, the value of n is high. It is apparent, therefore, that the weight percent (product of mole percent and molecular weight) of the polyethylene glycol is an important consideration because the water dissipatability of the copolyester decreases as the weight percent poly(ethylene glycol) in the copolyester decreases. For example, if the weight percent of poly(ethylene glycol) is too low, the water dissipatability of the copolyester may be inadequate. Furthermore, the weight percent of poly(ethylene glycol) is preferably adjusted such that it is inversely proportional to the mole percent of the difunctional sulfomonomer because the water dissipatability of the copolyester is a function of both the mole percent sulfomonomer and the weight percent polyethylene glycol.

Examples of suitable poly(ethylene glycols) include relatively high molecular weight polyethylene glycols, some of which are available commercially under the designation "Carbowax", a product of Union Carbide. Diethylene glycol is also especially suitable.

Other useful glycols for preparing copolymers may consist of aliphatic, alicyclic, and aralkyl glycols. Examples of these glycols include ethylene glycol; propylene glycol; 1, 3-propanediol, 2, 4-dimethyl-2-ethylhexane-1,3-diol; 2,2-dimethyl-1,3-propanediol; 2-ethyl-2-butyl-1,3-propanediol; 2-ethyl-2-isobutyl-1,3-propanediol; 1,3-butanediol; 1,4-butanediol; 1,5-pantanediol; 1,6-hexanediol; 2,2,4-trimethyl-1,6-hexanediol; thiodiethanol; 1,2-cyclohexanedimethanol; 1,3-cyclohexanedimethanol; 1,4-cyclohexanedimethanol; 2,2,4,4-tetramethyl-1,3-cyclobutanediol; p-xylylenediol.

A preferred polyester herein is a diglycol cyclohexan dimethanol isophthalates sulfoisophthalate polymer. Particularly superior results are achieved when the difunctional sulfo-monomer content is 5-

sodiosulfoisophthalic acid or its esters and the glyc I is a mixture of ethylene glycol or 1,4-cyclohexanedimethanol with diethylene glycol.

The treated pigment is incorporated into an aqueous gel system. It is preferable to use a gel system which provides optimum skin feel, spreadability, moisturisation, emolliency, rub-in and absorption characteristics. In preferred embodiments, the aqueous gel is substantially oil-free.

A second essential ingredient of the compositions of the invention is a hydrophilic gelling agent at a level of from about 0.1% to about 20%, preferably from about 0.2% to about 2%, and more preferably from about 0.3% to about 1%. The gelling agent preferably has a viscosity (1% aqueous solution, 20°C, Brookfield RVT) of at least about 4000 cps, more preferably at least about 10,000 cps, and especially at least 50,000 cps.

Suitable hydrophilic gelling agents can generally be described as water-soluble or colloidally water-soluble polymers, and include cellulose ethers (e.g. hydroxyethyl cellulose, methyl cellulose, hydroxy propylmethyl cellulose), polyvinylpyrrolidone, polyvinylalcohol, guar gum, hydroxypropyl guar gum and xanthan gum.

Preferred hydrophilic gelling agents herein, however, are acrylic acid/ethyl acrylate copolymers and the carboxyvinyl polymers sold by the B.F. Goodrich Company under the trade mark of Carbopol resins. These resins consist essentially of a colloidally water-soluble polyalkenyl polyether crosslinked polymer of acrylic acid crosslinked with from 0.75% to 2.00% of a crosslinking agent such as for example polyallyl sucrose or polyallyl pentaerythritol. Examples include Carbopol 934, Carbopol 940, Carbopol 950 and Carbopol 980. Carbopol 934 is a water-soluble polymer of acrylic acid crosslinked with about 1% of a polyallyl ether of sucrose having an average of about 5.8 allyl groups for each sucrose molecule. A most preferred polymer is Carbopol 950 which has an average molecular weight of about 4,000,000.

Also suitable for use herein are hydrophobically-modified cross-linked polymers of acrylic acid having amphipathic properties available under the

trade name Carbopol 1382, Carbopol 1342 and Pemulen TR-1 (CTFA Designation: Acrylates/10-30 Alkyl Acrylate Crosspolymer). A combination of the polyalkenyl polyether cross-linked acrylic acid polymer and the hydrophobically modified cross-linked acrylic acid polymer is also suitable and is preferred for use herein. The gelling agents herein are particularly valuable for providing excellent stability characteristics over both normal and elevated temperatures.

Neutralizing agents suitable for use in neutralizing acidic group containing hydrophilic gelling agents herein include sodium hydroxide, potassium hydroxide, ammonium hydroxide, monoethanolamine, diethanolamine and triethanolamine.

In the present compositions, glycerine (sometimes known as glycerol or glycerin) is preferably present at a level of from about 0.5% to about 20%, preferably from about 1% to about 10%, more preferably from about 4% to about 8% by weight of composition. Chemically, glycerine is 1,2,3-propanetriol and is a product of commerce. One large source of the material is in the manufacture of soap. Polyhydric alcohol humectants other than glycerol which can be added herein include sorbitol, propylene glycol, butylene glycol, hexylene glycol, ethoxylated glucose and hexanetriol.

The compositions of the present invention preferably also comprise a water-soluble polyglycerylmethacrylate lubricant. The water soluble polyglycerylmethacrylate lubricant used herein generally has a viscosity (10% aqueous solution, 20°C, Brookfield RVT) of less than about 4000 cps, preferably less than about 1000 cps and more preferably less than about 500 cps. In addition, the polyglycerylmethacrylate lubricant preferably also has a viscosity (neat) in the range of from about 200 to about 5000 cps (Brookfield RVT, 20°C), more preferably from about 500 to about 2000 cps and especially from about 700 to about 900 cps.

The polyglycerylmethacrylate lubricants which can be used in the compositions of this invention are available under the trademark Lubragel (RTM) from Guardian Chemical Corporation, 230 Marcus Blvd., Hauppauge, N.Y. 11787. In general, Lubragels can be described as hydrates or clathrates which are formed by the reaction of sodium glycerate with a

methacrylic acid polymer. Thereafter, the hydrate or clathrate is stabilized with a small amount of propylene glycol, followed by controlled hydration of the resulting product. Lubragels are marketed in a number of grades of varying glycerate: polymer ratio and viscosity. Preferred for use herein, however, is so-called Lubragel Oil which has a typical viscosity of about 800 cps. Other suitable Lubragels include Lubrigel TW, Lubragel CG and Lubragel MS.

In the present compositions, the polyglycerylmethacrylate lubricant is preferably incorporated at a level of from about 0.1% to about 10%, more preferably from about 0.2% to about 2%, and especially from about 0.3% to about 1% by weight of composition.

The compositions of the invention are in aqueous gel form and are preferably formulated so as to have a product viscosity of at least about 4,000 and preferably in the range from about 4,000 to about 300,000 cps, more preferably from about 20,000 to about 200,000 cps and especially from about 80,000 to about 150,000 cps (20°C, neat, Brookfield RVT), and a yield point of at least 50 dynes/cm² (Brookfield RVT, Spindle CP52, Plate Code A, 25°C). The compositions are also preferably substantially free of oil, i.e. contain less than about 1%, and preferably less than about 0.1% of oily or wax-like materials which are insoluble or which are not colloidally-soluble in the aqueous gel matrix at 10°C. "Colloidally-soluble" herein refers to particles in the usual colloidal size range, typically from 1 to 1000 nm, especially from 1 to 500 nm. In highly preferred embodiments, the compositions are substantially free of oily or wax-like materials which are insoluble or not colloidally soluble in distilled water at 20°C. Such materials include many conventional emollient materials such as hydrocarbon oils and waxes, glyceride esters, alkyl esters, alkenyl esters, fatty alcohols, certain fatty alcohol ethers and fatty acid esters of ethoxylated fatty alcohols, sterols extracted from lanolin, lanolin esters, wax esters, beeswax derivatives, vegetable waxes, phospholipids, sterols and amides.

The compositions of the invention have no need of and are preferably also substantially free of surfactant materials which are conventionally added to cosmetic cream and lotion compositions in order to emulsify a water-insoluble oily phase. Again, "substantially free" means less than about 1%,

preferably less than about 0.1% of the indicated materials. Such mulsifiers include ethoxylated fatty acids, ethoxylated esters, phosphated esters, ethoxylated fatty alcohols, polyoxyethylene fatty ether phosphates, fatty acid amides, acyl lactylates, soaps, etc.

A number of additional water-soluble materials can be added to the compositions of the invention, however. Such materials include the other humectants such as sorbitol, propylene glycol, ethoxylated glucose and hexanetriol; proteins and polypeptides and derivatives thereof; water-soluble or solubilizable preservatives such as Germall 115, methyl, ethyl, propyl and butyl esters of hydroxybenzoic acid, EDTA, Euxyl (RTM) K400, Bromopol (2-bromo-2-nitropropane-1,3-diol) and phenoxypropanol; anti-bacterials such as Irgasan (RTM) and phenoxyethanol (preferably at levels of from 0.5% to about 5%); soluble or colloidally-soluble moisturising agents such as hyaluronic acid and starch-grafted sodium polyacrylates such as Sanwet (RTM) IM-1000, IM-1500 and IM-2500 available from Celanese Superabsorbent Materials, Portsmith, VA, USA and described in USA-A-4,076,663; colouring agents; perfumes and perfume solubilizers etc. The compositions can also contain low levels of insoluble ingredients added, for example for visual-effect purposes, e.g. thermochromic liquid crystalline materials such as the microencapsulated cholesteryl esters and chiral nematic (non-sterol) based chemicals such as the (2-methylbutyl)phenyl 4-alkyl(oxy)benzoates available from Hallcrest, Glenview, Illinois 60025, U.S.A. Water is also present at a level of from about 50% to about 99.2%, preferably from about 80% to about 95% by weight of the compositions herein. The compositions of the invention can also contain from about 0.1% to about 10%, preferably from about 1% to about 5% of a panthenol moisturiser. The panthenol moisturiser can be selected from D-panthenol ([R]-2,4-dihydroxy-N-[3-hydroxypropyl]-3,3-dimethylbutamide), DL-panthenol, calcium pantothenate, royal jelly, panthetine, pantotheine, panthenyl ethyl ether, pangamic acid, pyridoxin, pantoyl lactose and Vitamin B complex. Highly preferred from the viewpoint of skin care and tack reduction is D-panthenol.

Other water-soluble materials can be added to the compositions of the invention. A highly preferred additional ingredient from the viewpoint of skin feel and tack reduction is a fluid copolymer of ethylene oxide and

propylene oxide having a viscosity in the range of from 55 to 300,000 Saybolt Universal Seconds [S.U.S.], preferably from 100 to 2,000 S.U.S. at 100°F, for example Ucon Fluid 75-H 450.

Another optional ingredient of the compositions of the invention is trimethylglycine, otherwise sometimes known as betaine. Trimethylglycine is valuable herein from the viewpoint of providing improved skin feel and tack reduction. In the present compositions, trimethylglycine is preferably present at a level of from about 1% to about 10% by weight, preferably from about 3% to about 7% by weight.

The pH of the compositions is preferably from about 4 to about 9, more preferably from about 4.5 to about 7.

The invention is illustrated by the following examples:

<u>Examples I to V</u>	I	II	III	IV
Glycerine	5	5	10	5.0
Lubragel Oil	0.5	0.5	2.0	0.5
Lubragel TW	-	1.0	-	5.0
Carbopol 950	0.5	0.5	1.0	1.0
Sodium hydroxide	0.25	0.25	0.5	0.5
Methyl parabens	0.2	0.3	0.2	0.3
Euxyl K400	0.1	-	0.1	-
Phenoxyethanol	-	-	-	2.5
polymer-treated pigment, TiO_2^1	6	6	4	7
polymer-treated pigment, red iron oxide ¹	0.2	0.4	0.9	0.3
polymer-treated pigment, yellow iron oxide ¹	0.4	0.3	0.2	0.5
polymer-treated pigment, black iron oxide ¹	0.05	0.3	0.5	0.1
Deionised water	----- To 100 -----			

1. C. I. Pigment materials.

The compositions are made by mixing at ambient temperature.

The compositions display improved skin residue characteristics together with excellent moisturising, shade matching, emolliency, rub-in and absorption characteristics, without consumer negatives such as rub-off and irritation.

CLAIMS

1. A cosmetic composition in the form of an aqueous tinted gel comprising from about 0.1% to about 20% by weight of at least one water-dispersible polymer-treated pigment and from about 0.1% to about 20% by weight of a hydrophilic gelling agent.
2. A cosmetic composition according to Claim 1 additionally comprising from about 0.5% to about 20% by weight of glycerine.
3. A composition according to Claim 2 comprising from about 1% to about 10%, preferably from about 4% to about 8% by weight of glycerine.
4. A composition according to any of claims 1 to 3 wherein the water-dispersible polymer-treated pigment is a water-dispersible polyester-or polyesteramide treated pigment.
5. A composition according to Claim 4 wherein the polyester or polyesteramide of the water-dispersible polymer-treated pigment comprises a dicarboxylic acid component, a difunctional sulfomonomer component and a glycol component.
6. A composition according to Claim 5 wherein the dicarboxylic acid component of the polyester is selected from aliphatic, alicyclic and aromatic dicarboxylic acids and mixtures thereof.
7. A composition according to Claim 6 wherein the dicarboxylic acid is isophthalic acid.
8. A composition according to Claim 5 wherein the difunctional sulfomonomer component is selected from a dicarboxylic acid, or ester thereof, containing a metal sulfonate group.
9. A composition according to Claim 8 wherein the difunctional sulfomonomer component is sulfoisophthalic acid.

10. A composition according to any of Claims 1 to 9 wherein the water-dispersible polymer-treated pigment is a water-dispersible polyester-treated pigment.
11. A composition according to any of Claims 1 to 10 wherein the water-dispersible polymer-treated pigment is a diglycol cyclohexanedimethanol isophthalates sulfoisophthalates copolymer-treated pigment.
12. A cosmetic composition according to any of Claims 1 to 11 additionally comprising from about 0.1% to about 10% by weight of a water-soluble polyglycerylmethacrylate lubricant having a viscosity (10% aqueous solution, 20°C, Brookfield RVT) of less than about 4000 cps.
13. A composition according to Claim 12 wherein the polyglycerylmethacrylate lubricant is a hydrate or clathrate formed by the reaction of sodium glycerate with a methacrylic acid polymer.
14. A composition according to Claim 12 or 13 wherein the polyglycerylmethacrylate lubricant has a viscosity (neat) in the range of from about 200 to about 5000 cps (Brookfield RVT, 20°C), preferably from about 500 to about 2000 cps, more preferably from about 700 to about 900 cps.
15. A composition according to any of claims 12 to 14 comprising from about 0.2% to about 2%, preferably from about 0.3% to about 1% by weight of the polyglycerylmethacrylate lubricant.
16. A composition according to any of Claims 1 to 15 comprising from about 1% to about 15%, preferably from about 5% to about 12% by weight of the water-dispersible polymer-treated pigment.
17. A composition according to Claim 16 wherein the water-dispersible polymer-treated pigment comprises from about 1% to about 40%, preferably from about 5% to about 30% by weight thereof of polymer.

18. A composition according to any of claims 1 to 17 having a viscosity (20°C, neat, Brookfield RVT) of from about 4000 to about 300,000 cps, and a yield point of at least 50 dynes/cm² (Brookfield RVT, Spindle CP52, Plate Code A, 25°C).
19. A composition according to any of claims 1 to 18 wherein the gelling agent has a viscosity (1% aqueous solution, 20°C, Brookfield RVT) of at least about 4000 cps, preferably at least about 10,000 cps.
20. A composition according to any of claims 1 to 19 wherein the gelling agent is a carboxyvinyl polymer, preferably a colloidally water-soluble polymer of acrylic acid cross-linked with from about 0.75% to about 2.0% of a cross-linking agent selected from polyallyl sucrose and polyallyl pentaerythritol.
21. A composition according to any of Claims 1 to 20 wherein the gelling agent comprises a hydrophobically-modified cross-linked polymer of acrylic acid having amphipathic properties.
22. A composition according to any of claims 1 to 21 comprising from about 0.2% to about 2%, preferably from about 0.3% to about 1% by weight of the gelling agent.
23. A composition according to any of Claims 1 to 22 which is substantially oil-free.
24. A composition according to any of Claims 1 to 23 comprising from about 0.1% to about 10% by weight of a panthenol moisturiser.
25. A composition according to any of Claims 1 to 24 comprising from about 1% to about 10% by weight of trimethylglycine.
26. A composition according to any of Claims 1 to 25 comprising from about 0.1% to about 5% by weight of a fluid copolymer of ethylene oxide and propylene oxide having a viscosity in the range of from about 55 to about 300,000 Saybolt Universal Seconds.

27. A composition according to any of Claims 1 to 26 comprising from about 0.001% to about 0.5% by weight of carboxymethylchitin.
28. A composition according to any of Claims 1 to 27 wherein the water-dispersible polymer treated pigment has a particle size in the range of from about 75 μ m to about 1000 μ m, preferably from about 125 μ m to about 500 μ m.

Patents Act 1977
 Examiner's report to the Comptroller under Section 17
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Databases (see below)

(i) UK Patent Office collections of GB, EP, WO and US patent specifications.

(ii) ON LINE DATABASES: WPI AND CLAIMS

Search Examiner
 M R WENDT

Date of completion of Search
 24 OCTOBER 1994

Documents considered relevant
 following a search in respect of
 Claims :-
 1 TO 28

Categories of documents

X: Document indicating lack of novelty or of inventive step.

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A: Document indicating technological background and/or state of the art.

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&: Member of the same patent family; corresponding document.

Category	Identity of document and relevant passages		Relevant to claim(s)
A	GB 2107186 A	(L'OREAL) see page 1 lines 44 to 51 page 5 lines 62 to 64	1
A	EP 0271925 A2	(REVLON) see Claim 1 page 5 lines 35 to 40 Example 1	1
A	WO 94/15580 A1	(P & G) see abstract Claims 1 to 3 page 8 lines 13 to 20 page 11 lines 7 etc	1

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